ABSTRACTS

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ABSTRACTS
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Numbers 1936–1988

1936. Determinants of Transient and Chronic Poverty: Evidence from Rural China

Jyotsna Jalan and Martin Ravallion
(June 1998)

Both chronic and transient poverty are reduced by greater command over physical capital, and life-cycle effects for the two types of poverty are similar. But there the similarities end. Most policies aimed at reducing chronic poverty may have little or no effect on transient poverty.

Are the determinants of chronic and transient poverty different? Do policies that reduce transient poverty also reduce chronic poverty?

Jalan and Ravallion decompose measures of household poverty into chronic and transient components and use censored conditional quantile estimators to investigate the household and geographic determinants of both chronic and transient poverty, taking panel data for post-reform rural China.

They find that a household's average wealth holding is an important determinant for both transient and chronic poverty.

Although household demographics, levels of education, and the health status of members of the household are important for chronic poverty, they are not significant determinants of transient poverty.

Both chronic and transient poverty are reduced by greater command over physical capital, and life-cycle effects for the two types of poverty are similar. But there the similarities end.

Smaller and better-educated households have less chronic poverty, but household size and level of education matters little for transient poverty. Living in an area where health and education are better reduces chronic poverty but appears to be irrelevant to transient poverty. Nor are higher foodgrain yields a significant determinant of transient poverty, although they are highly significant in reducing chronic poverty.

These findings suggest that China's poor-area development program may be appropriate for reducing chronic poverty but is unlikely to help reduce variations in consumption that households typically face in poor areas — the exposure to uninsured income risk that underlies transient poverty will probably persist.

Other policy instruments may be needed to deal with transient poverty, including seasonal public works, credit schemes, buffer stocks, and insurance options for the poor.

This paper — a product of the Development Research Group— is part of a larger effort in the group to reexamine the role of the informal sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. The authors may be contacted at jjalan@worldbank.org or mravallion@worldbank.org. (22 pages)

1937. Aid, the Incentive Regime, and Poverty Reduction

Craig Burnside and David Dollar
(June 1998)

Aid spurs growth and poverty reduction only in a good policy environment so it should be targeted to countries that have improved their economic policy. That aid tends to be allocated relatively indiscriminately is one factor that undermines its potential impact.

Spurring growth in the developing world is one stated objective of foreign aid. Another, more commonly cited, objective is reducing poverty. Generally poverty reduction and growth go hand in hand, but could aid mitigate poverty without measurably affecting growth?

Burnside and Dollar examine how foreign aid affects infant mortality — an important social indicator that provides indirect evidence that the benefits of development are reaching people everywhere.

They conclude that in developing countries with weak economic management — evidenced by poor property rights, high levels of corruption, closed trade regimes, and macroeconomic instability — there is no relationship between aid and the change in infant mortality. In distorted environments, development projects promoted by donors tend to fail.

And aid resources are typically fungible, so the aid does not in fact finance these projects. Aid finances the whole public sector at the margin, which is why the quality of management is the key to effective assistance. A government that cannot put effective development policies in place is unlikely to oversee the effective use of foreign aid.

On the other hand, there is a relationship between aid and a change in infant mortality when the recipient country has relatively good management. When management is good, additional aid worth 1 percent of GDP has a powerful effect, reducing infant mortality by 0.9 percent.

In other words, aid spurs growth and improvements in social indicators only in a good policy environment.

These findings strengthen the case for targeting foreign aid to countries that have improved their economic policy. But after controlling for per capita income and population, there has been almost no relationship between countries' economic policies and the amount of aid they get. The relatively indiscriminate allocation of assistance is one factor undermining the potential impact of aid.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to examine aid effectiveness. The study was funded by the Bank's Research Support Budget under the research project "Economic Policies and the Effectiveness of Foreign Aid" (RPO 681-70). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-347, telephone 202-473-7471, fax 202-522-3518, Internet address kkhine@worldbank.org. The authors may be contacted at cburnside@worldbank.org or ddollar@worldbank.org. (18 pages)

1938. What Explains the Success or Failure of Structural Adjustment Programs?

David Dollar and Jakob Svensson
(June 1998)

A few political economy variables can successfully predict the outcome of an adjustment loan 75 percent of the time. To select promising candidates for adjustment, the World Bank must do a better job of understanding which environments are promising for reform and which are not. Being more selective may mean smaller volumes of lending.

In the 1980s development assistance shifted largely from financing investments (such as roads and dams) to promoting policy reform. This change came because of a growing awareness that developing countries were held back more by poor policies than by a lack of finance for investment.

After nearly 20 years' experience with policy-based or conditional lending, there have now been many studies of adjustment lending, most of which take a case-study approach. Many conclude that policy-based lending works if countries have decided on their own to reform.

Dollar and Svensson examine a database of 220 World Bank-supported reform programs to identify why adjustment programs succeed or fail.

They find that a few political economy variables can successfully predict the outcome of an adjustment loan 75 percent of the time. Variables under the World Bank's control — resources devoted to preparation and supervision or number of conditions — have no relationship with an adjustment program's success or failure.

What development agencies must do, then, is select promising candidates for adjustment support. When the candidate is a poor selection, devoting more administrative resources or imposing more conditions will not increase the likelihood of successful reform.

To improve its success rate with adjustment lending, the World Bank must become more selective and do a better job of understanding which environments are promising for reform and which are not. That is likely to lead to fewer adjustment loans, unless there is a significant change in the number of promising reformers. To become more effective at supporting policy reform, the agency must be willing to accept that this may lead to smaller volumes of lending.

This paper — a product of the Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to examine aid effectiveness. The study was funded by the Bank's Research Support Budget under the research project "Economic Policies and the Effect of Foreign Aid" (RPO 681-70). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-347, telephone 202-473-7471, fax 202-522-3518, Internet address kkhine@worldbank.org. The authors may be contacted at ddollar@worldbank.org. or jsvensson@worldbank.org. (34 pages)

1939. Second Thoughts on Second Moments: Panel Evidence on Asset-Based Models of Currency Crises

Arturo J. Galindo and William F. Maloney
(June 1998)

The evidence is broadly supportive of an asset view of speculative attacks and the importance of the variance of monetary aggregates in predicting currency crises, but it cast some doubt on existing theories.

The literature on speculative attacks has been given new impetus by the collapse of the European currency arrangements beginning in 1992, by the Mexican peso crisis and aftereffects in 1994, and most recently by speculative attacks across Asia.

One strand of this literature stresses the importance of imbalances in stocks of monetary and financial aggregates rather than traditional "flow" factors, arguing that massive, volatile capital flows have become a dominant feature of the global landscape, and that exchange-rate levels and current accounts have not proved convincing as proximate causes of crises.

Galindo and Maloney test two popular asset-based models of speculative attacks — Krugman and Rotemberg (1992) and Calvo and Mendoza (1995) — especially their emphasis on the second moments of monetary aggregates.

Analyzing monthly panels of appropriate countries in three regions, they find evidence for the importance of money/reserve ratios predicted by both models, and their variance as predicted by Calvo and Mendoza.

But the variance of velocity does not appear to be important, casting some doubt on the Krugman-Rotemberg target zone framework and the interpretation of the Calvo-Mendoza results.

This paper — a product of the Poverty and Economic Management Unit of the Latin America and the Caribbean Region— is part of a larger effort in the region to understand the determinants of macroeconomic instability. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marta Cervantes, room I8-095, telephone 202-473-7794, fax 202-522-0054, Internet address mcervantes@worldbank.org. William Maloney may be contacted at wmaloney@worldbank.org. (27 pages)

1940. The Structure of Labor Markets in Developing Countries: Time Series Evidence on Competing Views

William F. Maloney
(June 1998)

The informal sector behaves as an unregulated entrepreneurial sector rather than the disadvantaged segment of a dual labor market. Overall, it expands in upturns and contracts in downturns, though there is some evidence of queuing to enter the formal sector.

Competing conceptions of the large, unprotected, "informal" workforce in developing countries differ greatly in their implications for the labor reform considered to be essential complements to trade liberalization and "fair" competition in international trade.

Traditionally, the informal sector is viewed as the disadvantaged segment of a dual labor market segmented by legislated or union-induced rigidities and high labor costs in the protected (or "formal") sector. In this view, the size of the informal sector is a testament to the inefficiencies in labor allocation and the magnitude of required reform. In cyclical downturns, the informal sector is thought to absorb displaced workers from the formal sector (with informal earnings falling relative to those in the formal sector) and then to contract again during recovery as the queue for "good jobs" shortens again.

A recent, related view postulates a long-term trend in which large enterprises, confronted by heightened global competition, increasingly subcontracts to unprotected workers as a way to reduce costs and gain flexibility. This is particularly relevant in the debate about establishing common labor standards in regional trade agreements.

Maloney reexamines the traditional view of the dual labor market by studying the dynamics between the formal and informal sectors across a business cycle and a period of trade liberalization in Mexico (1987–93).

He shows conventional comparisons of earnings, even across time, to be unreliable tests for segmentation. As an alternative, he shows that transitions on informal employment, the size of the informal sector, and levels of mobility to be procyclical, increasing with upturns, and decreasing with recessions. He tests for, and finds, however, some evidence of queuing to enter formal employment.

Overall, he contends, the informal sector behaves as an unregulated entrepreneurial sector rather than the disadvantaged wing of a dual labor market. There is evidence of increased subcontracting over time, with trade liberalization, but it is not clear that workers are worse off as a result.

This paper — a product of the Poverty and Economic Management Unit, Latin America and the Caribbean Region — is part of a larger effort in the region to reexamine the role of the informal sector. The study was funded by the Bank's Research Support Budget under the research project "The Informal Sector in Mexico" (RPO 680-59). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marta Cervantes, room I8-095, telephone 202-473-7794, fax 202-522-0054, Internet address mcervantes@worldbank.org. The author may be contacted at wmaloney @worldbank.org. (29 pages)

1941. Are Labor Markets in Developing Countries Dualistic?

William F. Maloney
(June 1998)

There is little evidence to support the traditional dualistic view of a labor market segmented between formal and informal sectors as the principal paradigm through which to view the informal sector. The division between good jobs and bad jobs seems to cut across issues of formality — and for many workers, inefficient labor codes and low levels of human capital may make employment in the informal sector more desirable.

There is a long tradition of viewing as disadvantaged the roughly 40 percent of workers in developing countries who are unprotected by labor legislation and work in small "informal" firms.

Maloney offers an alternative to traditional views of the relationship between formal and informal labor markets: For many workers, inefficiencies in present labor codes and relatively low levels of human capital (labor productivity) may make employment in the informal sector more desirable.

He offers the first study of worker transitions among sectors, using detailed panel data from Mexico, and finds little evidence to support the traditional dualistic view.

He shows that traditional earning differentials cannot prove or disprove segmentation in developing countries, and patterns of worker mobility do not suggest a rigid labor market — or one segmented into formal and informal divisions.

It is possible that the market is dualistic in the sense used in the industrial world, but the division between good jobs and bad jobs seems to cut across issues of formality.

This paper — a product of the Poverty and Economic Management Unit, Latin America and the Caribbean Region— is part of a larger effort in the region to reexamine the role of the informal sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marta Cervantes, room I8-095, telephone 202-473-7794, fax 202-522-0054, Internet address mcervantes@worldbank.org. The author may be contacted at wmaloney @worldbank.org. (34 pages)

1942. Poverty Correlates and Indicator-Based Targeting in Eastern Europe and the Former Soviet Union

Christiaan Grootaert and Jeanine Braithwaite
(July 1998)

Social protection systems in the transition economies have been inadequate to meet the challenges of transition, being both costly and poorly targeted. The largest group of poor people is the working poor — especially workers with little education (primary education or less) or outdated vocational or technical education.

Grootaert and Braithwaite compare poverty in three Eastern European countries (Bulgaria, Hungary, and Poland) with poverty in three countries of the former Soviet Union (Estonia, Kyrgyz Republic, and Russia). They find striking differences between the post-Soviet and Eastern European experiences with poverty and targeting. Among patterns detected:

- Poverty in Eastern Europe is significantly lower than in former Soviet Union countries.
- Rural poverty is greater than urban poverty.
- In Eastern Europe there is a strong correlation between poverty incidence and the number of children in a household; in the former Soviet Union countries this is less pronounced, except in Russia.
- There is a gender and age dimension to poverty in some countries. In single-person households, especially of elderly women, the poverty rate is very high (except in Poland) and poverty is more severe. The same is true in pensioner households (except in Poland). In Poland the pension system has adequate reach.
- Poverty rates are highest among people who have lost their connection with the labor market and live on social transfers (other than pensions) or other non-earned income. But through sheer mass, the largest group of poor people is the working poor — especially workers with little education (primary education or less) or outdated vocational or technical education. Only those with special skills or university education escape poverty in great numbers, thanks to the demand for their skills from the newly emerging private sector.
- The poverty gap is remarkably uniform in Eastern European countries, especially Hungary and Poland, suggesting that social safety nets have prevented the emergence of deep pockets of poverty. This is much less true in the former Soviet Union, where those with the highest poverty rate also have the largest poverty gap.

In the short to medium term, creating employment in the informal sector will generate a larger payoff than creating jobs in the formal (still to be privatized) sector, so programs to help (prospective) entrepreneurs should take center stage in poverty alleviation programs.

This paper is a joint product of the Social Development Department and Europe and Central Asia, Poverty Reduction and Economic Management Sector Unit. The study was funded by the Bank's Research Support Budget under the research project "Poverty and Targeting of Social Assistance in Eastern Europe and the Former Soviet Union" (RPO 680-33). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Gracie Ochieng, room MC5-158, telephone 202-473-1123, fax 202-522-3247, Internet address gochieng@worldbank.org. The authors may be contacted at cgrootaert @worldbank.org or jbraithwaite @worldbank.org. (112 pages)

1943. The Implications of Hyperbolic Discounting for Project Evaluation

Maureen Cropper and David Laibson
(July 1998)

There is strong empirical evidence that people discount the future hyperbolically, applying larger annual discount rates to near-term returns than to returns in the distant future. The problem with hyperbolic discounting is that it leads to time-inconsistent plans — a person who discounts the future hyperbolically will not carry out the consumption plans he makes today. Hyperbolic discounting provides a rationale for lowering the required rate of return on investment projects but does not justify treating environmental projects differently from other investment projects.

The neoclassical theory of project evaluation is based on models in which agents discount the future at a constant exponential rate. But there is strong empirical evidence that people discount the future hyperbolically, applying larger annual discount rates to near-term returns than to returns in the distant future.

This has led some policymakers to argue that, in evaluating programs with benefits spread over decades (such as subway systems and abatement of greenhouse gases), a low long-term discount rate should be used. In fact, some economists have suggested that higher discount rates be applied in the present and lower rates in the future.

Cropper and Laibson demonstrate that this is incorrect.

The problem with hyperbolic discounting is that it leads to time-inconsistent plans — a person who discounts the future hyperbolically will not carry out the consumption plans he makes today.

Cropper and Laibson note that if social decisionmakers were to use people's 1998 hyperbolic rates of time preferences, plans made in 1998 would not be followed — because the low discount rate applied to returns in, say, 2020, will become a high discount rate as the year 2020 approaches.

Since it makes sense to analyze only plans that will actually be followed, Cropper and Laibson characterize the equilibrium of an intertemporal game played by an individual who discounts the future hyperbolically. Along an equilibrium consumption path, the individual will behave as though he were discounting the future at a constant exponential rate. The individual's consumption path is, however, Pareto inferior: He would be better off if he could force himself to consume less and save more.

This provides a rationale for government subsidization of interest rates or, equivalently, lowering the required rate of return on investment projects.

Although hyperbolic discounting provides a rationale for lowering the required rate of return on investment projects, it does not provide justification for those who seek to treat environmental projects differently from other investment projects.

This paper — a product of Environment and Infrastructure, Development Research Group — is part of a larger effort in the group to develop benefit-cost methods for environmental decisionmaking. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Anna Maranon, room MC2-533, telephone 202-473-9074, fax 202-522-3230, Internet address amaranon@worldbank.org. Maureen Cropper may be contacted at mcropper@worldbank.org. (13 pages)

1944. Detecting Price Links in the World Cotton Market

John Baffes and Mohamed I. Ajwad
(July 1998)

Links between international cotton prices have improved in the past decade — in the short run largely because prices are now transmitted more quickly. To a lesser extent, and for different reasons, prices should also converge somewhat more in the long run.

Baffes and Ajwad examine the degree to which international cotton prices are linked and test whether such links have improved over the past decade.

They conclude that the degree of linkage has improved over the past decade, in the short run largely as the result of short-run price transmission — and to a lesser extent because of long-run comovement.

Improvements in information technology have made it much easier for information about demand to be disseminated across markets, so changes in cotton prices attributable to a price shock in one place are soon transmitted to prices in other places.

Moreover, many countries have liberalized their cotton subsectors, and in some countries the government's role has changed substantially.

In East Africa, for example, cotton marketing and trade was handled entirely by government parastatals. Now Tanzania, Uganda, and Zimbabwe have liberalized their marketing and trade regimes, to varying degrees.

In the former Soviet Union (FSU) cotton shipped from Central Asia to other parts of the FSU were considered part of domestic trade. Now cotton exports from Uzbekistan are the most important component of that country's foreign trade.

With such changes, one should expect cotton prices to converge somewhat more in the long run.

Price links between West Africa and Central Asia are much greater than between the United States and other markets — in part because most West African and Central Asian cotton is exported, compared with only 40 percent of U.S. cotton (and 60 percent of Greek cotton). Prices in countries that export most of their cotton are more likely to converge than prices in countries where prices are subject to both domestic and international demand conditions.

To improve price risk management, there should be futures contracts other than those traded on the New York Cotton Exchange, which mostly serves domestic U.S. needs and is not used extensively by non-U.S. hedgers and speculators.

This paper — a product of the Development Research Group — is part of a larger effort in the group to investigate the behavior of world prices. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact John Baffes, room MC3-545, telephone 202-458-1880, fax 202-522-1151, Internet address jbaffes@worldbank.org. (36 pages)

1945. Evaluating a Targeted Social Program When Placement Is Decentralized

Martin Ravallion and Quentin Wodon
(July 1998)

A social program that relies partly on geographic decentralization for placement provides indicators helpful for identifying the program's impact on welfare.

An assessment of the welfare gains from a targeted social program can be seriously biased unless it takes proper account of the endogeneity of program participation.

Bias comes from two sources of placement endogeneity: the purposive targeting of the geographic areas to receive the program, and the targeting of individual recipients within selected areas.

Decentralization of program placement decisions is common, because of the administrative cost of centralized placement decisions and the fact that local groups and governments are likely to be better informed about who most needs help. But full decentralization is uncommon; the center typically retains control of broad geographic targeting.

Ravallion and Wodon argue that partial decentralization of program placement decisions creates control and instrumental variables useful for identifying program benefits.

The central allocation to a local level of government is presumably based on observable indicators. The central allocation will also influence the allocation to an individual but is unlikely to determine outcomes at the individual level conditional on individual program participation. So with suitable controls for the welfare-relevant geographic characteristics determining program placement decisions, the center's allocation across areas can be used as an instrumental variable for individual participation.

The authors use Bangladesh's Food for Education program to illustrate their approach. A single post-intervention cross-sectional household survey was used to identify the impact of the program on school attendance, using geographic placement at the village level as an instrument for individual program placement. To deal with bias from the endogeneity of village selection, the authors used a detailed community survey coordinated with the household survey to control for likely sources of heterogeneity in geographic influences on school attendance, consistent with prior information on how the government targeted the program geographically.

They found that the programs had significant and sizable impacts on school attendance. At mean points, the program's incentive increased attendance by 24 percent of the maximum feasible days of schooling.

A regression estimator ignoring the purposive program placement was found to result in a substantial underestimation of the program's impact. Indeed, the simplest possible control group method—assuming that nonparticipants provide a valid counterfactual — performed much better than a regression method treating placement as exogenous.

This paper — a product of the Development Research Group — is part of a larger effort in the group to evaluate the impact of social programs. The study was funded by the Bank's Research Support Budget under the research project "Policies for Poor Areas" (RPO 681-39). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. Martin Ravallion may be contacted at mravallion @worldbank.org. (17 pages)

1946. Estonia: The Challenge of Financial Integration

Carlos Cavalcanti and Daniel Oks
(July 1998)

To gain recognition from its counterparts in the European Union, Estonia must give priority to improving risk management in its banks and improving institutional capacity for bank regulation and supervision.

The most important challenge of Estonia's strategy for integrating its financial sector with that of the European Union (EU) is to upgrade its capacity for prudential regulation and supervision enough to gain recognition from its EU counterparts.

Doing so is also a crucial complement to Estonia's strategy for strengthening macroeconomic policy and stabilization — especially because, under a currency board, its banks are a central part of the transmission mechanism for capital flows.

Under the currency board banks have been able to arbitrage between domestic and foreign financial markets — increasingly funding themselves from abroad. Such arbitrage has become the key funding source for rapidly expanding credit, contributing to the country's large current account deficit.

Estonian authorities are justified in tightening prudential regulation and supervision because of the risks associated with an overheating economy, general market volatility, and the possible deterioration in the quality of credit.

Improvements in prudential regulation should be followed by improvements in the country's capacity to supervise banks and an upgrading of the banks' risk management systems, to manage the increasingly complex operations and diverse markets in which they engage. These steps should be a priority. The institutional development of banks and supervision have lagged behind market developments.

In improving the regulatory framework for banks, Estonia should avoid establishing incentives for tax arbitrage that lead to the creation of artificial and socially costly financial intermediaries.

This paper is a product of the Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia Region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Linda Osborne, room H11-109, telephone 202-473-8482, fax 202-477-1440, Internet address losborne@worldbank.org. The authors may be contacted at ccavalcanti@worldbank.org or doks @worldbank.org. (23 pages)

1947. Patterns of Economic Growth: Hills, Plateaus, Mountains, and Plains

Lant Pritchett
(July 1998)

The recent "growth" literature has underestimated the importance — and ignored the implications — of the instability and volatility of growth rates. In particular, the use of "panel" data to investigate the effects of long-term growth in developing countries — especially with "fixed effects" estimates — is potentially more problematic than helpful.

Except during the Great Depression, the historical path for per capita GDP in the United States has been reasonably stable exponential trend growth, with modest cyclical deviation. Graphically, growth in the United States displays as a modestly sloping, only slightly bumpy, hill. But almost nothing that is true about per capita GDP for the United States (or for other OECD countries) is true for developing countries.

First, per capita GDP in most developing countries does not follow a single time trend: For a given country, there is great instability in growth rates over time, relative to both average level of growth and to cross-sectional variance.

These shifts in growth rates lead to distinct patterns. Some countries have had steady growth (hills and steep hills); others have had rapid growth followed by stagnation (plateaus); others have had rapid growth followed by declines (mountains) or even catastrophic declines (cliffs); still others have experienced continuous stagnation (plains) or even steady decline (valleys).

Second, volatility — however measured — is much greater in developing than in industrial countries.

These stylized observations about growth rates, Pritchett concludes, suggest that it may be useless to use "panel data" to investigate long-term growth rates in developing countries. Perhaps more can be learned about developing countries by investigating what initiates (or halts) episodes of growth.

There is something of a professional split in "growth" literature, Pritchett observes. Macroeconomists studying industrial countries discuss steady-state growth and ponder whether all countries in the "convergence club" will reach the same happy level in the end. Development economists, on the other hand, are the pathologists of economics, having discovered that developing countries are most emphatically not all alike. Developing countries have found ways to be ecstatic but they have also discovered many different ways to be unhappy.

This paper — a product of the Development Research Group — is part of a larger effort in the group to understand the determinants of economic growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Sheila Fallon, room MC3-638, telephone 202-473-8009, fax 202-522-1153, Internet address sfallon@worldbank.org. The author may be contacted at lpritchett @worldbank.org. (40 pages)

1948. Comparative Advantage and the Cross-Section of Business Cycles

Aart Kraay and Jaume Ventura
(July 1998)

Business cycles are different in rich and poor countries — because the industries in which each group of countries specialize respond differently to domestic and foreign shocks.

Business cycles are less volatile in rich countries than in poor ones. They are also more synchronized with the world cycle. Kraay and Ventura develop two alternative but noncompeting explanations for those facts.

Both explanations proceed from the observation that the law of comparative advantage causes rich and poor countries to specialize in the production of different commodities. In particular, rich countries specialize in high-tech products produced by skilled workers and poor countries specialize in low-tech products produced by unskilled workers.

Cross-country differences in business cycles then arise as a result of asymmetries among the industries in which different countries specialize. Kraay and Ventura focus on two such asymmetries.

The first, which they label the "competition bias" hypothesis, is based on the idea that cross-country differences in production costs are more prevalent in high-tech industries, sheltering producers from foreign competition and therefore making them large suppliers in the markets for their products.

The second, which they label the "cyclical bias" hypothesis, is based on the idea that production costs in low-tech industries may be more sensitive to the shocks that drive business cycles.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study open-economy macroeconomics. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Aart Kraay, room MC3-369, telephone 202-473-5756, fax 202-522-3518, Internet address akraay@worldbank.org. (45 pages)

1949. Education and Earnings Inequality in Mexico

Ulrich Lachler
(July 1998)

Mexico's government should progressively shift more of the costs of higher education to its direct beneficiaries, facilitating the private absorption of those costs through student loan programs designed to correct market failures in the financial sector.

Education attainment levels increased dramatically for Mexico's labor force in the 1980s and early 1990s. In parallel, the country experienced a pronounced increase in earnings inequality from 1984–94, reflected in a higher dispersion of wages and an absolute decline in the real incomes of less educated, poorer Mexicans. This increased wage dispersion presents policymakers with a tradeoff between efficiency considerations (favoring increased spending on higher education) and equity considerations (favoring a more equal distribution of per student spending) in the allocation of fiscal resources to education.

Lachler concludes that the best way to deal with this equity-efficiency tradeoff is to encourage greater private participation in higher education. His main findings are that:

- The accumulation of human capital during 1984–94, as proxied by education attainment, was accompanied by a more equal distribution of education attainment levels over that period and, thus, exerted an equalizing effect on the distribution of incomes. The increased income inequality observed over that period appears to be caused by an increased rate of skill-based technological change, whose transmission to Mexico and other developing countries may have been facilitated by the increased openness of their economies.
- The greater dispersion of wages observed in Mexico during the past decade raised the rates of return on investing in higher education, reversing the traditional pattern where primary education exhibits the highest rates of return.
- The social rates of return across levels of schooling were more uniform in 1994 than in 1984, suggesting a more efficient assignment of education spending. At the same time, the distribution of spending on education became more egalitarian, as per student spending in higher education declined markedly compared with per student spending at the primary level. This surprising coincidence in the pattern of spending on education was only possible because Mexico started out with a very distorted resource allocation in education that was both highly inequitable and inefficient. As Mexico's policymakers are on the way to correcting

these distortions, the opportunities for avoiding the equity-efficiency tradeoff within Mexico's centralized education framework will become progressively exhausted.

• There is little reason to expect the pace of technological change, which appears mainly responsible for raising wage dispersion and the relative returns on higher education, to abate. Efficiency considerations dictate that Mexico should respond by devoting more resources to higher education. However, the federal budget, which traditionally has financed the lion's share of higher education costs in Mexico, is unable to accommodate additional spending on higher education, while spending cuts elsewhere in the education sector are bound to raise serious equity questions. Thus, to avoid falling behind in terms of human capital accumulation, greater private sector participation is necessary, at least in terms of cost recovery from the main beneficiaries of higher education.

This paper — a product of the Mexico Country Department — emerged from research in the preparation of the 1998 Country Economic Memorandum and is part of the department's larger effort to engage in a fruitful economic policy dialogue with Mexican policymakers. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Carmen Lazcano, room I4-135, telephone 202-473-7776, fax 202-522-2113, Internet address clazcano@worldbank.org. The author may be contacted at ulachler@worldbank.org. (27 pages)

1950. Free Trade and Deep Integration: Antidumping and Antitrust in Regional Agreements

Bernard Hoekman
(July 1998)

Arguments that common or similar antitrust rules are essential for eliminating antidumping do not have a strong economic foundation and are only weakly supported by existing regional agreements.

Preferential trading agreements (PTAs) are increasingly including elements of "deep" integration — efforts to agree on common regulatory regimes.

Hoekman explores what the PTA experience suggests about the relationship between shallow integration — attaining unconditional intra-area free trade (including the abolition of antidumping) — and deeper integration, especially agreement about common antitrust rules.

He argues that common antitrust disciplines in PTAs tend to be driven by a broader agenda — which revolves around attaining economic integration (for example, by creating a single market), not by a need to abolish antidumping. Many PTAs continue to apply antidumping to internal trade flows.

In practice, it may be that the demise of antidumping in PTAs is constrained because governments are concerned about the potential for their partners to engage in beggar-thy-neighbor industrial policies. They may consider antidumping a useful defensive instrument in this connection, as it can substitute for instruments such as countervailing duties, which have a much higher foreign policy content and may be more difficult to pursue.

If so, antidumping is a particularly ineffective and costly instrument. Eliminating it in PTAs would help focus attention on the real source of trade problems (industrial policies and government intervention) rather than on the symptoms (allegations of unfair dumping).

Earlier versions of this paper — a product of International Trade, Development Research — were presented at the Brookings Conference on Private Practices and Trade Policy and at a CEPR/Institut d'Analisi Economica (CSIC) workshop on competition and trade policy (Barcelona, November 1997). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. The author may be contacted at bhoekman@worldbank.org. (42 pages).

1951. Crisis Management in Argentina during the 1994–95 Mexican Crisis: How Did Markets React?

Eduardo J. J. Ganapolsky
and Sergio L. Schmukler
(July 1998)

The Mexican crisis of 1994–95 had strong spillover effects on other countries. This study of how capital markets reacted to each policy announcement and piece of breaking news during the crisis reveals that the market welcomed announcements that reflected Argentina's adoption of credible policies and firm commitment to the currency board.

Argentina was hit hard by the Mexican crisis of 1994–95. The Argentine peso came under attack and there was a run on bank deposits. Argentina successfully announced a series of policies to mitigate the spillover effects, without abandoning its currency board.

Ganapolsky and Schmukler show how capital markets reacted to each policy announcement and piece of breaking news.

They find that Argentina's agreement with the International Monetary Fund, the dollarization of reserve deposits in the central bank, and the reduction in reserve requirements, among other things, had a strong positive impact on market returns. The market welcomed announcements that reflected the adoption of credible policies and demonstrated a firm commitment to the currency board.

The authors also find that, after a period of higher volatility, the appointment of a new finance minister (after Domingo Cavallo left the finance ministry) calmed down stock and bond markets, significantly decreasing the variance in stock and bond market returns. On the other hand, the interest rate became more volatile after the appointment of the new finance minister and when reserve requirements were lowered.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to understand how financial markets work. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-347, telephone 202-473-7471, fax 202-522-3518, Internet address kkhine@worldbank.org. Sergio Schmukler may be contacted at sschmukler@worldbank.org. (34 pages)

1952. Enterprise Isolation Programs in Transition Economies

Simeon Djankov
(August 1998)

Poor results from the isolation program for financially distressed firms in Romania *suggest that enterprise restructuring under government auspices does not work — that transition economies should privatize rapidly, without attempting first to restructure enterprises.*

How should countries in transition to market economies handle the losses of large loss-making enterprises? Over the past six years several governments in transition economies have implemented isolation programs that combine features of reorganization under bankruptcy (as in industrial countries) with severance payments for employees and assistance with labor deployment.

Djankov analyzes isolation programs for financially distressed firms in transition economies based on empirical evidence from Romania, the program that had the greatest coverage.

The results indicate that Romania's isolation program fulfilled none of its intentions. Despite substantial costs, it neither delivered tangible improvements in operational performance nor improved the process of privatization or liquidation of large loss-making enterprises.

Worse still, the program may have delayed restructuring by not imposing hard budget constraints. Firms included in the program faced softer budget constraints than their counterparts outside the program. Loss makers were not selected through objective criteria, and the agency in charge was not sheltered from political pressure in enforcing hard budget constraints.

Djankov therefore questions the feasibility of creating special programs for enterprise restructuring under government auspices, with government agencies choosing beneficiaries and deciding on the scope of activity.

His conclusion supports the insistence of international donor organizations that governments in transition economies privatize rapidly, without attempting first to restructure enterprises.

This paper — a product of the Economic Policy Unit, Finance, Private Sector, and Infrastructure Network — is part of a larger effort in the network to study transition economies. The study was funded by the Bank's Research Support Budget under the research project "Enterprise Restructuring in Bulgaria and Romania" (RPO 681-96). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC4-406, telephone 202-473-3722, fax 202-522-2530, Internet address hvo1@worldbank.org. The author may be contacted at sdjankov@worldbank.org. (17 pages)

1953. Trade Policies and Incentives in Indian Agriculture: Methodology, Background Statistics and Protection, and Incentive Indicators, 1965–95 — Background Paper 1, Sugar and Sugarcane

Garry Pursell and Anju Gupta
(August 1998)

This paper describes the methodology for a series of background papers that measure incentives in India's agriculture. The first study on sugarcane and sugar shows that the domestic market has been isolated from world markets by extensive controls, but between 1965 and 1995 there was a significant downward trend in the ratio of domestic to international sugar prices.

This paper is the first in a series of studies to provide background data and protection and incentive indicators for 13 major Indian crops, which have been estimated in connection with extensive research on Indian agricultural incentives. The general methodology of the studies is described in the first section of the paper. The second section of the paper focuses on sugarcane and sugar. It shows that between 1965 and 1994 real domestic prices of sugar and cane were quite stable in India, declining an average of 0.6 percent (sugar) and 0.3 percent (cane) a year. During the same 29 years the free market price of sugar fluctuated widely (expressed in Indian rupees) but in real terms increased about 1.3 percent a year.

This contrast in trends reflects the real devaluation of the rupee after 1986 but meant that by the early 1990s, at world sugar prices of US 13–15 cents a pound or higher, India's domestic prices were roughly equivalent to, or below, world reference prices.

Because of the fluctuations in world free market prices, nominal protection of sugar and sugarcane production in India — as measured by differences between domestic prices and border reference prices — also fluctuated. Nominal protection was:

- High during low world prices in the 1960s and the mid-1980s.
- Negative when world prices were high in the mid-1970s and early 1980s.
- Moderate to low by previous standards between 1989 and 1994.

Incentives for cane production did not change much when allowance is made for the nominal protection of tradable inputs (principally fertilizers) or subsidies for the principal nontradable imports (canal irrigation, credit, and electricity for pumpsets). Incentives for cane production were somewhat higher in Uttar Pradesh than in Maharashtra and Tamil Nadu.

Half of Indian cane production is used by artisanal producers of gur and small-scale de facto unregulated producers of khandsari sugar. Because of India's complex regulatory system — especially in the important sugar-producing state, Uttar Pradesh — incentives are significantly higher for unregulated activities than for the modern sugar mill sector. Regulations subject sugar mills to controls that require them to:

- Sell specific quantities of their sugar production at low "levy" prices.
- Sell molasses production at a fraction (0.1 or less) of open market and border prices.
- Pay minimum prices (for specific quantities of cane) at above-free-market prices, except in years of cane shortages.

This paper is a product of Trade, Development Research Group. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Garry Pursell may be contacted at gpursell@worldbank.org. (89 pages)

1954. Politicians and Firms in Seven Central and Eastern European Countries

Stijn Claessens and Simeon Djankov
(August 1998)

This study of how privatization and stabilization (hard budget constraints) affect enterprise behavior shows that privatized firms consistently outperform state enterprises in productivity growth. Total factor productivity improves in privatized firms,

where there is also less overemployment than in state enterprises.

Claessens and Djankov test several propositions derived by Shleifer and Vishny (1994, 1996) about how privatization and stabilization (hard budget constraints) affect enterprise behavior.

They document the changes in financing, employment, and operating efficiency that have occurred in more than 6,300 manufacturing enterprises in seven Central and Eastern European countries (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia). They then compare the relative performance of privatized and state-owned enterprises.

Controlling for institutional differences and the endogeneity of privatization choices, they find that privatization is associated with significant improvements in total factor productivity and reductions in employment. Reductions in soft financing are associated with further productivity gains.

State-owned enterprises employ more workers, have lower worker productivity, receive more financing and direct subsidies, and have higher variable costs than privatized firms, particularly firms privatized for more than three years. Privatized firms also consistently outperform state enterprises in productivity growth.

Over time, the role of politicians in allocating bank financing and subsidies appears to have declined, however, and banks have played a greater role in (efficiently) allocating resources. And the institutional environment appears to have improved in most countries, suggesting that the influence of corruption has declined over time.

The results — which provide significant support for the Shleifer-Vishny model — demonstrate the beneficial effects of privatization in the presence of stabilization and decreasing corruption.

This paper — a product of the Financial Economics Group, Financial Sector Practice — is part of a larger effort in the network to study transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC10-628, telephone 202-473-3722, fax 202-522-2031, Internet address hvo1@worldbank.org. The authors may be contacted at cclaessens@worldbank.org or sdjankov@worldbank.org. (31 pages)

1955. Appraising Workfare Programs

Martin Ravallion
(August 1998)

Simple analytical tools can help appraise workfare programs when data and time are scarce. They can also help design better programs.

Workfare programs aim to reduce poverty by providing low-wage work for those who need it. They are often turned to in a crisis when there is too little time for a rigorous evaluation. They are also relatively complex programs, and difficult to evaluate.

Ravallion offers some simple analytical tools for rapidly appraising workfare programs. For pedagogic purposes, the two programs are stylized versions of a range of programs found in actual practice. One is for a middle-income country (in which unemployment has risen sharply in the wake of macroeconomic stabilization and reform), the other for a low-income country (hit by severe drought). The sole objective of both programs is to reduce poverty.

By rough calculations, the cost of a $1 gain to the poor is $2.50 in both cases, though the same gain in current earnings would cost 50 to 100 percent more.

Benefits to the poor could be greatly enhanced by design changes — for example, switching to more labor-intensive production methods for subprojects (in the middle-income country); enhancing the indirect benefits within poor communities from the assets created; or striving for greater cost recovery from the nonpoor.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to provide practical guidelines for project and policy evaluation. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-638, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. The author may be contacted at mravallion@worldbank.org. (25 pages)

1956. Benefit Incidence and the Timing of Program Capture

Peter Lanjouw and Martin Ravallion
(August 1998)

Benefits from schooling and antipoverty programs in rural India were captured early by the nonpoor. The poor tend to benefit from program expansion, and lose from contraction. Conventional methods of assessing benefit incidence hide this fact.

Survey-based estimates of average program participation conditional on income are often used in assessing the distributional impacts of public spending reforms.

But program participation could well be nonhomogeneous, so that marginal impacts of program expansion or contraction differ greatly from average impacts.

Using the geographic variation found in sample survey data for rural India for 1993–94, Lanjouw and Ravallion estimate the marginal odds of participating in schooling and antipoverty programs. Their results suggest early capture of these programs by the nonpoor.

Thus, conventional methods of assessing benefit incidence underestimate the gains to India's rural poor from higher public outlays, and their loss from program cuts.

This paper — a product of Poverty and Human Resources, Development Research Group — was prepared as a background paper for the Bank's 1998 Poverty Assessment for India. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. The authors may be contacted at planjouw@worldbank.org or mravallion@worldbank.org. (37 pages)

1957. Bidding for Concessions

Michael Klein
(August 1998)

When privatization transforms a public infrastructure monopoly into a private one by means of a long-term concession agreement, how should concession contracts be designed and awarded?

In the past decade it has become popular to privatize infrastructure ventures in such sectors as energy, telecommunications, transport, and water. For good reasons or bad, private firms are often given monopoly franchises through long-term concession agreements (for example, build-operate-transfer schemes).

Klein surveys issues associated with the design of such concession contracts and their award to private parties. The discussion focuses on:

- Contract design (what is to be awarded).
- Whether to use competitive bidding or negotiation to make the award.
- How to structure competitive bidding.
- Who conducts the auction and who monitors the concessionaires' performance.

To encourage efficient performance and to minimize post-award renegotiation, it is crucial to consistently and comprehensively define performance specifications and the parameters of incentives and risk-sharing. As a rule the concession award should be made competitively, unless there are good reasons to do otherwise, such as excessive transactions costs (for the size of the contract) or special requirements for speed or innovation.

Typically, competitive concession awards are made by first-price sealed bids. In a number of cases, however, there are strong arguments for open auctions. Concessions may also be re-awarded by way of auction, although somewhat arbitrary bid preferences may have to be set.

Auctioneers for complex concession contracts should operate at arm's length from all interested parties, including politicians. It may make sense to let independent agencies that regulate the concession scheme run the auction.

This paper — a product of the Private Participation in Infrastructure Division, Private Sector Development Department — is part of a larger effort in the department to analyze issues on private participation in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jocelyn Dytang, room Q7-183, telephone 202-473-7161, fax 202-522-3481, Internet address jdytang@worldbank.org. The author may be contacted at mklein1 @worldbank.org. (24 pages)

1958. Total Strangers or Soul Mates? Antidumping and Competition Policies in Latin America and the Caribbean

J. Luis Guasch and Sarath Rajapatirana
(August 1998)

As Latin American and Caribbean countries have liberalized their trade regimes, they have enthusiastically adopted antidumping measures that reduce competition. Competition laws are only beginning to make their appearance in the region. Antidumping and competition policies are strangers in the region when they should be soul mates.

As a result of trade reforms in the 1980s and 1990s Latin American and Caribbean countries became more open than at any time since World War II. However, these countries have recently begun to use antidumping measures as the new protection weapon of choice, as other barriers to trade have been reduced. In fact, the fastest growing antidumping actions are within regional integration arrangements, where they are being applied by member countries against each other.

Guasch and Rajapatirana argue that antidumping is anticompetitive and that its usual justification as a counter to predatory behavior is not relevant in the region. It is imperative, they say, that antidumping be contained if not altogether eliminated. While they find that safeguards are less anticompetitive than antidumping, they believe that all exceptional protection measures, such as antidumping, countervailing, and safeguards, should be considered together with competition policies. In other words, they should become soul mates rather than remain total strangers.

Guasch and Rajapatirana do not find that fine-tuning antidumping policy is a good option. Rather, they believe that both trade and competition policymaking ought to be brought under a single entity, as in Peru. This would lead to a more competitive solution.

This paper — a product of the Finance, Private Sector, and Infrastructure Group, Latin America and the Caribbean Region — is part of a larger effort in the department to. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Joy Troncoso, room I5-059, telephone 202-473-7826, fax 202-522-2106, Internet address jtroncoso@worldbank.org. The authors may be contacted at jguasch@worldbank.org or srajapatirana @worldbank.org. (26 pages)

1959. Is There a Credit Crunch in East Asia?

Wei Ding, Ilker Domaç, and Giovanni Ferri
(August 1998)

To what extent can tight monetary policy help restore market confidence in the aftermath of financial crises? Analyzing the East Asian experience, this study concludes that protracted and heavy reliance on tight monetary policy might even be counterproductive. The study finds that the credit crunch is widespread, and its negative impact particularly affects small banks and enterprises.

The issue of the credit crunch in the aftermath of the Asian crisis has stimulated much debate. Indeed, some features of the East Asian economies, such as bank-based financial systems and high leverage, make them particularly vulnerable to monetary and financial shocks. Under such circumstances, the credit channel of transmission of these shocks is likely to lead to a credit crunch, affecting the flow of bank loans to those agents — households and small and medium-sized enterprises — for whom close substitutes for bank credit are unavailable. In turn, the disruption to the availability of finance for bank-dependent borrowers may stymie economic activity.

In practice, however, it is difficult to detect the credit channel effects that lead to a credit crunch. Reliance on trends of credit aggregates alone is inadequate to prove that there has been an adverse shift in the supply of loans: even a decline or slowdown of credit could stem from a decrease or deceleration in demand. A frequently used methodology to overcome this problem focuses on both credit aggregates and the yield spread between bank loans and risk-free assets, such as government bonds. If this spread rises while credit aggregates slow down, one can conjecture that the supply of loans has either decreased more or increased less than demand. But further qualification is needed. The increase of the spread might simply reflect a rising risk premium triggered by the fact that the negative shock reduces the net worth of economic agents because of larger financial outlays. Accordingly, the relevant spread to capture the worsening credit conditions that affect bank-dependent borrowers is the spread between bank lending rates and corporate bonds. The yield spread between corporate and government bonds measures the general risk premium.

The study applies this methodology to Indonesia, Malaysia, the Philippines, the Republic of Korea, and Thailand and shows that the credit crunch is widespread, while its negative impact particularly affects small banks and enterprises. On the basis of the findings, the authors claim that: (1) a protracted and heavy reliance on tight monetary policy, entailing high real interest rates, appears inappropriate for restoring market confidence; (2) it is desirable to consider alternative policy instruments that do not place further stress on the banking sector and on its lending to the corporate sector; and (3) policy actions are warranted to alleviate the strain that the crisis has put on small banks and enterprises.

This paper — a product of the East Asia and the Pacific Region — is part of a larger effort in the region to analyze the patterns and consequences of the East Asian crisis, with particular reference to the link between real and financial sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Flavia Fernandes, room MC8-134, telephone 202-458-0453, fax 202-522-1557, Internet address ffernandes@worldbank.org. The authors may be contacted at wding @worldbank.org, idomac@worldbank.org, or gferri @worldbank.org. (38 pages)

1960. Calm after the Storms: Income Distribution in Chile, 1987–94

Francisco H. G. Ferreira and Julie A. Litchfield
(August 1998)

With the profound political and economic changes of the 1970s and 1980s behind it, and regardless of its trade patterns, Chile's income distribution is, for the moment, calm. Education may be the most important variable affecting the structure of, and changes in, inequality in Chile.

After rising in the 1960s, falling in the early 1970s, and rising again from the mid-1970s to the mid-1980s, income inequality seems to have stabilized in Chile since about 1987.

With the stormy period of economic and political reform of the 1970s and 1980s well over, no statistically significant Lorenz dominance results could be detected after 1987. Scalar measures of inequality confirm this picture of stability but suggest a slight change in the shape of the density function — with some compression at the bottom compensated for by a stretching at the top.

As inequality remained broadly stable, sustained economic growth led to substantial poverty reduction, according to a range of measures and with respect to three different poverty lines. Poverty mixed stochastic dominance tests confirm this result.

All of these findings are robust to different choices of equivalence scales.

An examination of the factors underlying these trends suggests that an equilibrium has (for the moment) been reached between rising demand for and supply of skills — the demand for skills associated with technological progress and the supply of skills associated with expansion of education. Chile's trading pattern might well be tangential to its recent distributional dynamics.

This paper — a product of the Poverty Reduction Group, Poverty Reduction and Economic Management Network — is part of a larger effort in the network to understand income distribution dynamics in developing countries. The study was funded by the Bank's Research Support Budget under the research project "Poverty and Income Distribution Dynamics in a High Growth Economy: The Case of Chile, 1987–94" (RPO 681-59). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grace Ilogon, room MC4-644, telephone 202-473-3732, fax 202-522-3283, Internet address gilogon@worldbank.org. Francisco H. G. Ferreira may be contacted at fferreira @worldbank.org. August 1998. (50 pages)

1961. Protecting the Environment and the Poor: A Public Goods Framework Applied to Indonesia

Gunnar S. Eskeland and Chingying Kong
(August 1998)

Strategies to control air pollution would be altered by redistribution objectives. In an urban program, the emphasis in the control strategy would shift toward services and goods consumed by the rich, including transport. In a program including rural areas, optimal air pollution control would be reduced because many rural households would be net losers, and they are poorer.

As is evident from public finance principles, redistribution objectives do not influence environmental policies if there are other, costless means of redistribution. How does optimal environmental protection depend on redistribution objectives?

Eskeland and Kong develop a framework that treats air quality as a pure public good, and tracks net beneficiaries as those who value air quality improvements more than their costs in a pollution control strategy.

The framework highlights the distributional characteristics of the public good and of the costs for the control strategy. One critical parameter for the distributional characteristics of the public good is the elasticity (with respect to income) of willingness to pay for environmental improvements.

Strategies to control urban air pollution would be altered by redistribution objectives — to be more aggressive in reducing emissions from luxury goods such as transport (private and general) and less aggressive for goods more heavily consumed by the poor (including several energy sources).

Some air pollution control strategies cover urban *and* rural areas. For those, optimal pollution control would typically be reduced by redistribution objectives, as rural households are net losers, and they are poorer.

This paper — a product of the Development Research Group — is part of a larger effort in the group to study environmental problems and policies in developing countries. The study was funded by the Bank's Research Support Budget under the research project "Pollution and the Choice of Economic Policy Instruments in Developing Countries" (RPO 676-78). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo @worldbank.org. Gunnar Eskeland may be contacted at geskeland@worldbank.org. (32 pages)

1962. The Political Economy of Privatization: An Empirical Analysis of Bank Privatization in Argentina

George R. G. Clarke and Robert Cull
(August 1998)

Political incentives appear to affect the likelihood of privatization. Provinces in Argentina whose governors belonged to a fiscally conservative party were more likely to privatize, and fiscal and economic crises increased the likelihood of privatization.

Clarke and Cull study the political economy of bank privatization in Argentina. The results of their study strongly support the hypothesis that political incentives affect the likelihood of privatization.

They find that:

- Provinces whose governors belonged to the fiscally conservative Partido Justicialista were more likely to privatize.
- Fiscal and economic crises increased the likelihood of privatization.
- Poorly performing banks were more likely to be privatized.

They tested the hypotheses for a specific industry in a specific country, making it possible to control for enterprise performance and institutional characteristics. It seems reasonable to expect that similar results might hold in other industries and countries.

This paper — a product of the Development Research Group — is part of a larger effort in the group to investigate the determinants of structural change in development countries' banking sectors. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, Internet address psintimaboagye @worldbank.org. The authors may be contacted at gclarke@worldbank.org or rcull @worldbank.org. (27 pages)

1963. Commodity Risk Management and Development

Donald F. Larson, Panos Varangis, and Nanae Yabuki
(August 1998)

Many developing countries that are dependent on commodity prices have found previous approaches to price instability unsatisfactory. Increasingly, they are relying on market-based instruments to deal with price uncertainty.

In 1995, 57 countries depended on three commodities for more than half their exports, reports UNCTAD. And commodities, fuels, grains, and oilseeds are important imports for several countries. The notorious volatility of commodity prices is a major source of instability and uncertainty in commodity-dependent countries, affecting governments, producers (farmers), traders, processors, and financial institutions. Further, commodity price instability has a negative impact on economic growth, income distribution, and poverty alleviation.

Early attempts to deal with commodity price volatility relied on buffer stocks, buffer funds, government intervention in commodity markets, and international commodity agreements to stabilize prices. These were largely unsuccessful — sometimes spectacularly so. Buffer funds went bankrupt, commodity agreements were suspended, buffer stocks proved ineffective, and government intervention was both costly and ineffective.

As the poor performance of such stabilization schemes became more evident, academics and policymakers began distinguishing between programs that tried to alter price distribution (domestically or internationally) and programs that used market-based approaches for dealing with market uncertainty.

This change in approach coincided with a significant rise in the use of market-based commodity risk management instruments — aided by the liberalization of markets, the lowering of trade and capital control barriers, and the globalization of commodity markets.

By the mid-1990s, several governments, state companies, and private sector participants began using commodity derivatives markets to hedge their commodity price risks. Participation in those markets is growing, but important barriers to access remain, including counterparty risk, problems small groups (such as farmers) have aggregating risks, basis risk (no correlation of local and international prices), no local reference prices, low liquidity, no derivatives markets for certain products, and low levels of knowhow.

International institutions, local governments, and the private sector could facilitate developing countries' access to derivatives markets and the use of risk management tools to solve public sector problems.

This paper — a product of Rural Development, Development Research Group — was prepared for the roundtable discussion on New Approaches to Commodity Price Risk Management in Developing Countries (Washington, DC, April 28, 1998). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-544, telephone 202-473-3716, fax 202-522-1150, Internet address pkokila@worldbank.org. The authors may be contacted at dlarson @worldbank.org, pvarangis@worldbank.org, or nyabuki@worldbank.org. (36 pages)

1964. Public Investment and Economic Growth in Mexico

Ulrich Lachler and David Alan Aschauer
(August 1998)

Mexico's government has learned that the only way to ensure that the public investment program contributes significantly to growth is by maintaining a high quality of investments. This means paying attention to rate of return and clearly distinguishing between the roles of the public and private sector.

Mexico's growth rate began to plummet at roughly the same time that its public investment expenditures declined. That decline also appears to coincide with a slowdown in the growth of infrastructure capital in the electricity, transport, and communications sectors. Because of these parallel developments, many economists have attributed at least part of the blame for the decline in Mexico's growth after 1981 to the decline of public infrastructure investment. The empirical results presented in this report provide only limited support for this argument. They also suggest, in turn, that increases in public investment would not automatically translate into faster output and productivity growth.

One reason not to take for granted a positive relationship between more public investment and faster growth is public investment's crowding out effect on private investment. Although the time-series regression results for Mexico all point toward a crowding out coefficient of less than unity, the existence of a significant crowding out effect limits the growth impact of public investment by reducing its net effect on capital accumulation.

The time-series results also suggest that the economy's total factor productivity growth responds positively to increases *in the ratio of public to private investment.* In light of that result, increases in public investment should have a positive net impact on economic growth, despite significant crowding out effects. Chow breakpoint tests indicate, however, that the positive productivity effect appears to have weakened significantly in the past decade.

A third reason for questioning a stable relationship is that the impact of increased public investment is likely to depend on how it is financed. The cross-country regressions reported here indicate that a general increase in the public capital stock has a positive impact on growth only if financed through savings generated through lower public consumption expenditures, but not if financed through higher public debt, which implies higher current and future taxation levels. The scope for reducing public consumption expenditures in Mexico is very limited, however, since they are already at rock bottom levels. Therefore, the only way to assure that the public investment program makes a significant contribution to growth is by improving its "quality" through careful attention to its rate of return and complementarity with private capital.

In Mexico the most important reforms to make public investment more productive came from policymakers' recognition of the need to distinguish more clearly between the roles of the public and private sectors. This led to the privatization of most public enterprises and a reorientation of public investment to a more narrowly focused set of activities. In addition, the government took important steps to strengthen the institutional framework within which the public investment program is determined.

This paper — a product of the Mexico Country Department — emerged from research in preparation of the 1998 Country Economic Memorandum and is part of the department's larger effort to engage Mexico's policymakers in an economic policy dialogue. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Carmen Lazcano, room I4-135, telephone 202-473-7776, fax 202-522-2113, Internet address clazcano @worldbank.org. The authors may be contacted at ulachler@worldbank.org or daschauer@abacus.bates.edu. (19 pages)

1965. Manufacturing Firms in Developing Countries: How Well Do They Do, and Why?

James Tybout
(August 1998)

Competition among manufacturers in developing countries is remarkably vigorous. Nonetheless, markets are imperfect, so the general trend toward trade liberalization has yielded benefits beyond the traditional gains from specialization.

Manufacturing firms in developing countries have traditionally been relatively protected. They have also been subject to heavy regulation, much of it biased in favor of large enterprises. Accordingly, it is often argued that manufacturers in these countries perform poorly in several respects:

- Markets tolerate inefficient firms, so cross-firm productivity dispersion is high.
- Small groups of entrenched oligopolists exploit monopoly power in product markets.
- Many small firms are unable or unwilling to grow, so important economies of scale go unexploited.

Tybout assesses each of these conjectures, drawing on plant- and firm-level studies of manufacturers in developing countries. He finds systematic support for none of them. Turnover is substantial, exploited scale economies are modest, and convincing demonstrations of monopoly rents are generally lacking.

Overprotection and overregulation are probably less a problem in developing countries than are uncertainty about policies and demand, poor rule of law, and corruption.

Tybout does find some evidence that protection increases firms' price-cost margins and reduces average efficiency levels at the margin.

And although the econometric evidence on technology diffusion in developing countries is limited, it does suggest that protecting "learning" industries is unlikely to foster productivity growth.

All of which suggests that the general trend toward trade liberalization has yielded greater benefits than the traditional gains from trade.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to link firm-level performance with commercial policy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6869, fax 202-522-1159, Internet address ltabada@worldbank.org. The author may be contacted at jtybout@worldbank.org. (62 pages)

1966. Sulfur Dioxide Control by Electric Utilities: What Are the Gains from Trade?

Curtis Carlson, Dallas Burtraw,
Maureen Cropper, and Karen L. Palmer
(August 1998)

Title IV of the 1990 U.S. Clean Air Act Amendments offers firms facing high marginal costs for pollution abatement the chance to purchase the right to emit sulfur dioxide from firms with lower costs. In the long run such allowance trading may achieve substantial cost savings over an "enlightened" command and control program with a uniform emission-rate standard. But in the short run what has lowered costs is technical change and the fall in low-sulfur coal prices.

Title IV of the 1990 U.S. Clean Air Act Amendments established a market for transferable sulfur dioxide emission allowances among electric utilities. The market offers firms facing high marginal costs for pollution abatement the opportunity to purchase the right to emit sulfur dioxide from firms with lower costs. It is expected to yield more cost savings than a command and control approach to environmental regulation.

To evaluate the performance of the market for sulfur dioxide allowances, Carlson, Burtraw, Cropper, and Palmer use econometrically estimated marginal abatement cost functions for power plants affected by Title IV. They investigate whether the much-heralded fall in the cost of abating sulfur dioxide can be attributed to allowance trading.

They find that for plants that use low-sulfur coal to reduce sulfur dioxide emissions, technical change and the fall in low-sulfur coal prices have lowered marginal abatement cost curves by more than half since 1985. And that is the main source of cost reductions rather than trading allowances per se.

In the long run, allowance trading may achieve cost savings of $700 million to $800 million a year more than could be expected from an "enlightened" command and control program with a uniform emission-rate standard. But comparing potential cost savings in 1995 and 1996 with actual emissions costs suggests that most trading gains were unrealized in the first two years of the program.

This paper — a product of Environment and Infrastructure, Development Research Group — is part of a larger effort in the group to examine the successes and failures of environmental regulation as a guide to formulating environmental policy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tourya Tourougui, room MC2-522, telephone 202-458-7431, fax 202-522-3230, Internet address ttourougui@worldbank.org. Maureen Cropper may be contacted at mcropper @worldbank.org. (42 pages)

1967. Agriculture and the Macroeconomy

Maurice Schiff and Alberto Valdes
(August 1998)

This paper surveys the literature on the interaction between agriculture and the macroeconomy in both industrial and developing countries, identifying what the authors believe to represent its most significant contributions and shortcomings.

Based on an economywide perspective, this paper begins with a discussion of the bias against exports and agriculture that characterized the economic literature and the development strategies in many developing countries after World War II. This is followed by an analysis of how the macroeconomic environment affects agricultural price incentives. Specifically, the paper discusses how policies concerning industrial protection, exchange rates, and interest rates and other fiscal policies can strongly influence the economic incentives for agriculture compared with other sectors, identifying the most relevant literature and alternative approaches used on this issue. It then proceeds to examine how the real exchange rate can be affected by exogenous shocks, such as the foreign terms of trade, with emphases on the Dutch Disease phenomenon and agriculture. The paper next examines the influence of interest rates on incentives in agriculture, arguing that, surprisingly, this has been a neglected area in the literature.

The paper explores the effects on agriculture of structural adjustment programs implemented since the early 1980s in developing countries. The final section surveys the literature on agriculture and the macroeconomy in industrial countries, focusing on the impact of the exchange rate on export competitiveness in the United States, the cost of agricultural protection for the overall economy in Europe and Japan, and the increased importance of fluctuations in money markets for the farm sector and the additional instability they generate.

This paper — a joint product of Trade, Development Research Group, and the Rural Development Department — will be published in B. Gardner and G. Rausser, eds., *Handbook of Agricultural Economics,* North Holland Publishers. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Alberto Valdes, room S8-015, telephone 202-473-5491, fax 202-522-3307, Internet address avaldes@worldbank.org. Maurice Schiff may be contacted at mschiff@worldbank.org. (37 pages)

1968. The Economics and Law of Rent Control

Kaushik Basu and Patrick Emerson
(August 1998)

What stirs most people against rent control laws in the United States and elsewhere are stories of people who have held apartments for many years and now pay "absurdly" low rents for them. There are important reasons for removing rent controls, but the shock value of a low rent is not one of them.

Basu and Emerson construct a model of second-generation rent control, describing a regime that does not permit rent increases for sitting tenants — or their eviction. When an apartment becomes vacant, however, the landlord is free to negotiate a new contract with a higher rent.

They argue that this stylized system is a good (though polar) approximation of rent control regimes that exist in many cities in India, the United States, and elsewhere.

Under such a regime, if inflation exists, landlords prefer to rent to tenants who plan to stay only a short time. The authors assume that there are different types of tenants (where "type" refers to the amount of time tenants stay in an apartment) and that landlords are unable to determine types before they rent to a tenant. Contracts contingent on departure date are forbidden, so a problem of adverse selection arises.

Short stayers are harmed by rent control while long-term tenants benefit. In addition, the equilibrium is Pareto inefficient.

Basu and Emerson show that when tenant types are determined endogenously (when a tenant decides how long to stay in one place based on market signals) in the presence of rent control, there may be multiple equilibria, with one equilibrium Pareto-dominated by another.

In other words, many lifestyle choices are made based on conditions in the rental housing market. One thing rent control may do is decrease the mobility of the labor force, because tenants may choose to remain in a city where they occupy rent-controlled apartments rather than accept a higher-paying job in another city.

Basu and Emerson show that abolishing the rent control regime can do two things: shift the equilibrium to a better outcome and result in lower rents, across the board.

A version of this paper — a product of the Office of the Senior Vice President and Chief Economist, Development Economics — was presented at an Applied Microeconomics Workshop at Cornell University. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Michelle Mason, room MC4-338, telephone 202-473-0809, fax 202-522-1158, Internet address mmason1 @worldbank.org. Kaushik Basu may be contacted at kbasu@worldbank.org. (40 pages)

1969. Protecting the Poor in Vietnam's Emerging Market Economy

Dominique van de Walle
(September 1998)

The very principles on which Vietnam's highly decentralized, community-based assistance and safety net system is built are *threatened by the country's emerging market economy. Increasing household mobility, without which the market system cannot function, especially dictates a rethinking of the foundation of Vietnam's community-based safety net.*

Under Vietnam's former command economy, lack of household mobility ensured close community and family solidarity, and households belonged to local cooperatives that provided for the welfare of their members. Developing a reliable, effective system of redistributive transfers and safety nets to replace such faltering local institutions will be important if Vietnam is to make a successful transition to a market economy.

Van de Walle uses Vietnam as a case study in rapidly assessing the strengths and weaknesses of an existing safety net when data and ex post evaluations are weak. She provides a broad qualitative assessment, identifying key issues on which knowledge must improve.

Vietnam's poverty reduction program and safety net would improve, she concludes, through a strengthening of institutional structures and policies, including:

- National norms for identifying the poor consistently across regions.
- Survey and other instruments with which to consistently measure and monitor local needs and program performance.
- Integration and coordination between subprograms, with well-defined and universal rules for local implementation.
- Welfare-maximizing redistribution of resources across space so that everyone is treated equally, regardless of where they live.
- More resources and attention to helping households and communities deal with covariate risk.

The government's new Hunger Eradication and Poverty Reduction Program — primarily an effort to coordinate policy efforts and resources to improve the safety net's performance and cost-effectiveness — could help improve social protection by focusing on these five areas.

Increasing household mobility, without which the market system cannot function, especially dictates a rethinking of the foundation of Vietnam's community-based assistance and safety net system. Household mobility makes it difficult to target the poor and mobilize community resources to help them. Heavy decentralization inhibits Vietnam's ability to provide adequate protection from covariate risks that are rising because of environmental destruction. Addressing this problem will require more national risk pooling and overcoming likely political hurdles to a reallocation of resources to Vietnam's poor and vulnerable.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to improve social protection policies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. The author may be contacted at dvandewalle @worldbank.org. (39 pages)

1970. Trade Liberalization and Endogenous Growth in a Small Open Economy: A Quantitative Assessment

Thomas F. Rutherford and David G. Tarr
(September 1998)

Although trade liberalization has been linked econometrically and through casual empiricism to large income increases, attempts to quantify its impact in static simulation models have shown estimated gains. This paper shows that when the endogenous dynamic effects of trade liberalization are built into simulation models, the estimated gains are indeed very large. But complementary regulatory, financial market, and macroeconomic reforms are important to realize the largest gains.

Rutherford and Tarr develop a numerical endogenous growth model approximating an infinite horizon, which allows them to investigate the relationship between trade liberalization and economic growth.

Economic theory generally implies that trade liberalization will improve economic growth, and the two phenomena are positively correlated in empirical tests, but the connection is not well-substantiated in numerical general equilibrium models.

In the authors' model, an intermediate input affects aggregate output through a Dixit-Stiglitz function. Additional varieties provide the engine of growth in this framework and the existence of this mechanism magnifies the welfare costs. In this model with lump sum revenue replacement, reducing a tariff from 20 percent to 10 percent produces a welfare increase (in terms of Hicksian equivalent variation over the infinite horizon) of 10.7 percent of the present value of consumption in their central model, where the economy is assumed to be unable to borrow on international financial markets. If macroeconomic and financial reforms are in place that would allow international borrowing, however, the same tariff cut is estimated to result in a 37 percent increase in Hicksian equivalent variation. On the other hand, if inefficient replacement taxes must be used in an economy without the capacity to borrow internationally, the gains would be reduced to 4.7 percent. Larger tariff cuts — typical of those in many developing countries over the past 30 years — produce larger estimated welfare gains at least proportionate to the size of the cut.

The authors apply the model to five developing countries and estimate the impact of the tariff changes those countries plan to undertake as part of Uruguay Round commitments. Because of the dynamic effects, estimated gains are considerably larger than those found in the literature on the impact of the Uruguay Round.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to assess the impact of trade and investment on economic growth. The study was funded by the Bank's Research Support Budget under the research project "The Dynamic Impact of Trade Liberalization in Developing Countries" (RPO 681-40). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. David Tarr may be contacted at dtarr@worldbank.org. (49 pages)

1971. Promoting Better Logging Practices in Tropical Forests

Marco Boscolo and Jeffrey R. Vincent
(September 1998)

Performance-based renewal conditions for tropical forest concessions provide a powerful incentive for loggers to adopt reduced-

impact logging practices and to comply with minimum-diameter cutting limits — even with short concession agreements.

In government-owned tropical forests, timber is often harvested under concession agreements with private logging companies.

Forestry departments typically impose logging regulations to minimize the negative environmental impacts of logging, but logging practices throughout the tropics appear to be undermining the sustainability of timber and nontimber benefits from tropical forests.

Boscolo and Vincent use bioeconomic simulations to test the empirical significance of several common recommendations for promoting better logging practices in tropical forests. They find that:

- Because of the effects of discounting, longer concessions give loggers little incentive to adopt reduced-impact logging or to comply with minimum-diameter cutting limits.
- Royalties can be used to encourage compliance with minimum-diameter cutting limits but discourage the adoption of reduced-impact logging. And per tree royalties, which encourage compliance with minimum-diameter cutting limits, tend to be less effective as revenue instruments.
- Relatively small performance bonds can be used to induce loggers to adopt reduced-impact logging, but very large bonds are needed to induce compliance with minimum-diameter cutting limits.
- Reduced-impact logging and minimum-diameter cutting limits both have significant positive effects on environmental indicators, but these benefits come at the cost of a substantial reduction in the timber value of the stand.
- Performance-based renewal conditions provide a powerful incentive for loggers to adopt reduced-impact logging and to comply with minimum-diameter cutting limits — even with short concession agreements.
- Performance-based renewal conditions sharply reduce the size of the performance bond needed to induce compliance with minimum-diameter cutting limits. Royalties, but not area charges, have a similar, although weaker, effect.

The authors' results also suggest that a cause of premature reentry into logged forests is minimum-diameter cutting limits that exceed minimum commercial log diameters, combined with weak control over access to logged-over forests.

This paper — a product of the Development Research Group — is part of a larger effort in the group to elucidate the economics of conservation policies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tourya Tourougui, room MC2-522, telephone 202-458-7431, fax 202-522-3230, Internet address ttourougui@worldbank.org. Marco Boscolo may be contacted at mboscolo@hiid.edu. (52 pages)

1972. Why Privatize? The Case of Argentina's Public Provincial Banks

George R. G. Clarke and Robert Cull
(September 1998)

Argentina's experience suggests that bank privatization may succeed only when accompanied by a sound, incentive-compatible system of prudential regulation.

Argentina has been a leader among developing countries in restructuring its banking sector. Clarke and Cull analyze the performance of those banks before and after privatization and estimate fiscal savings associated with privatizing Argentina's banks rather than keeping them public and later recapitalizing them.

The authors describe the process of privatization, including the creation of residual entities for the assets and liabilities of public provincial banks that private buyers found unattractive and the creation of a special fund (the Fondo Fiduciario) to convert the short-term liabilities of the residual entities into longer-term obligations.

They argue that the Fondo, created through cooperation between the Argentine federal government and the World Bank, was key in making privatization of the banks politically feasible. Argentina privatized roughly half of its public provincial banks.

The Argentine experience suggests that bank privatization may succeed only when accompanied by a sound, incentive-compatible system of prudential regulation. The regulatory environment affects a bank's solvency.

Improved regulation and supervision alone does not deliver the same benefits as improved regulation and supervision combined with privatization. The provincial banks that remained in the public sector did not demonstrate the same performance gains as privatized provincial banks. The decision to maintain a public provincial bank is a costly one.

Policymakers should expect privatization to pass through some or all of the following steps:

- With respect to preprivatization audits, expect losses hidden in these banks to be larger than those indicated in prior audits.
- If residual entities are created, expect them to hold a large share of the assets and liabilities of the old public provincial bank, if the quality of its loan portfolio was low.
- Do not expect the price paid for the privatized entity (the so-called good bank) to be great, at least compared with assets and liabilities in the residual entity.
- If the residual entity is large, the province will be confronted with substantial short-term liabilities. But with assistance and an aggressive asset recovery strategy, governments should be able to navigate their way through short-term difficulty.
- The costs of privatization are less than the costs of future recapitalization, even if the near-term management of the residual entity does not go well.

This paper — a product of Regulation and Competition Policy, and Finance, Development Research Group — is part of a larger effort in the group to investigate the causes and consequences of bank privatization. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, Internet address psintimaboagye@worldbank.org. The authors may be contacted at gclarke @worldbank.org or rcull@worldbank.org. (36 pages)

1973. The Economic Analysis of Sector Investment Programs

Sethaput Suthiwart-Narueput
(September 1998)

Economic analysis of sector investment programs should use appropriate criteria — including a clear public rationale for the expenditure, motivated by a desire either to correct a market failure or to alleviate poverty. Otherwise public spending simply crowds out private supply, resulting in few net benefits to the economy.

One of the main objectives of a sector investment (or expenditure) program is to improve the development impact of public spending in a sector. Suthiwart-Narueput focuses on how to use economic analysis to help sector investment programs improve the development impact of public spending. He uses Kenya as a case study.

The analysis emphasizes using standard principles of public expenditure analysis to identify desirable changes in a sector spending program and to evaluate the degree to which the planned spending program incorporates those changes.

One of the most important criteria is that such planned expenditures should have a clear public rationale, motivated by a desire either to correct a market failure or to alleviate poverty. Otherwise public spending simply crowds out private investments, resulting in few net benefits to the economy.

Cost recovery may be considered desirable, for example, because it alleviates the government's fiscal constraint, ensures that a good or service yields a minimum level of benefits, and encourages a supply response from the private sector. But if the private benefits of the service are less than the costs, it would be better to transfer the resources representing the cost of the service directly to the poor (subsidizing inefficient services is not propoor). The good or service subsidized should be consumed more by the poor than by others, and within those services there should be a self-selection mechanism that targets the services to the poorest. If subsidized goods and services fail to meet these criteria, spending should be directed toward other activities more likely to alleviate poverty.

There should be a reasonable relationship between spending and outcomes. Sometimes it is easiest to assess expenditure tradeoffs by looking at costs relative to other benchmark interventions (such as the cost of educating a child). In Kenya, for example, the budget for agricultural extension alone was double the entire budget for the Ministry of Transport and Communications.

Key economic indicators should reflect the key rationale: correcting for market failures or alleviating poverty. Performance indicators should also be assessed relative to a specific counterfactual (what would the outcome have been without that expenditure). Control groups should be incorporated into program design from the outset.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to improve the analysis of public expenditures and projects. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. The author may be contacted at ssuthiwartnarueput@worldbank.org. (16 pages)

1974. Volatility and the Welfare Costs of Financial Market Integration

Pierre-Richard Agenor and Joshua Aizenman
(September 1998)

Financial integration may be welfare-reducing if world interest rates under financial openness are highly volatile. Opening the economy to unrestricted inflows of capital, in particular, may magnify the welfare cost of existing distortions, such as congestion externalities or deposit insurance.

Agenor and Aizenman examine the effect of volatility on the costs and benefits of financial market integration.

The authors use a basic framework that combines the costly state verification model and the contract enforceability approach. They assess the welfare effects of financial market integration by comparing welfare under financial market integration by comparing welfare under financial autarky and financial openness. Under financial openness, foreign banks, which have lower costs of intermediation and a lower markup rate, have free access to domestic capital markets.

The analysis shows that financial integration may be welfare-reducing if world interest rates under openness are highly volatile.

The authors extend the basic framework in various directions. They show that opening the economy to unrestricted inflows of capital, in particular, may magnify the welfare cost of existing distortions, such as congestion externalities or deposit insurance.

This paper — a product of the Macroeconomic Management and Policy Division, Economic Development Institute — is part of a larger effort in the institute to understand the benefits and costs of financial integration in a world of high capital mobility. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sheilah King-Watson, room G4-014, telephone 202-473-3730, fax 202-676-9810, Internet address skingwatson@worldbank.org. Pierre-Richard Agenor may be contacted at pagenor@worldbank.org. (42 pages)

1975. Acting Globally While Thinking Locally: Is the Global Environment Protected by Transport Emission Control Programs?

Gunnar S. Eskeland and Jian Xie
(September 1998)

Locally motivated air quality programs have only minor collateral benefits for the global climate. If agencies with global and local agendas did business together, then individuals and firms — and even cities — would act globally when thinking locally, and one would see greater synergy.

Eskeland and Xie find that locally motivated air quality programs for urban transport have limited collateral benefits in terms of protecting the global climate. This could puzzle some, since these two public goods — one global, one local — seem to be jointly produced. However, air quality in Mexico City, Santiago, and elsewhere is predominantly pursued by technical improvements (making cars and fuels cleaner), and not by reducing demand for polluting goods and services (though in Europe high fuel taxes help reduce demand).

Control programs developed under joint stimulus to protect the global and local environment have not yet been seen, and they may surprise us when they come. However, they will likely rely more on reducing demand, using instruments such as corrective (Pigovian) taxes on fuels. The authors show how, if locally and globally charged agencies can do business together, consumers, producers, and cities will act globally when thinking locally. Only then will we know the extent to which local and global benefits are produced jointly.

This paper — a joint product of Public Economics, Development Research Group, and the Global Environment Unit, Environment Department — is part of a larger effort in the Bank to analyze environmental problems and policies in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. The authors may be contacted at geskeland@worldbank.org or jxie @worldbank.org. (19 pages)

1976. Capital Flows to Central and Eastern Europe and the Former Soviet Union

Stijn Claessens, Daniel Oks, and Rossana Polastri
(September 1998)

Foreign direct investment and, more recently, short-term debt and portfolio flows have become important parts of private capital flows to Central and Eastern Europe and the former Soviet Union. Private flows have increased in response to reform efforts, the buildup of reserves, and prospective membership in the European Union.

Private capital flows to Central and Eastern Europe and the former Soviet Union have taken off in recent years. Foreign direct investment was the most important such flow from 1991–97, but since 1993 short-term debt and portfolio flows have also been important.

The increase in these potentially more volatile short-term flows raises some questions about sustainability and vulnerability.

Perhaps more than in other developing countries, reform efforts appear to be the most important determinant of private flows to the region. Private flows also have responded positively to the buildup of reserves (a proxy for improvements in perceived creditworthiness) and to prospective membership in the European Union (reflecting greater economic integration with the West and a greater commitment to reform).

Official flows have been associated with the financing of fiscal deficits and appear to have led, rather than followed, countries' reform efforts.

This paper — a joint product of the Economic Policy Division, Poverty Reduction and Economic Management Network; and the Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia Region — was prepared for the National Bureau for Economic Research study, *Capital Flows to Emerging Markets,* organized by Sebastian Edwards. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC10-628, telephone 202-473-3722, fax 202-522-2031, Internet address hvo1@worldbank.org. The authors may be contacted at cclaessens@worldbank.org or rpolastri @worldbank.org. (44 pages)

1977. Economic Reforms in Egypt: Emerging Patterns and Their Possible Implications

Rania A. Al-Mashat and David A. Grigorian
(September 1998)

In addition to conventional sources of increased costs of government intervention, the declining popularity of Egypt's domestic debt might raise short-term interest rates and increase the cost of servicing newly issued debt. This has the potential of increasing the fiscal burden and undermining the credibility of the current fixed exchange rate regime.

Since Egypt's government introduced an economic reform and structural adjustment program in 1991, Egypt's Central Bank has been engaged in massive sterilized interventions to support the fixed nominal exchange rate regime.

The result of this process, however, has been an increasing fiscal burden, expressed in the volume of outstanding treasury bills and the interest payments on the stock of outstanding debt.

Al-Mashat and Grigorian present evidence of this and point out new channels for increased costs through further sterilization. In addition to conventional sources of increased costs, such as differentials between foreign and domestic real interest rates, the declining popularity of domestic debt might increase the short-term interest rate, thus increasing the cost of servicing newly issued debt.

The authors examine the possibility of an increased debt burden because of attempts to roll over outstanding debt and extend its maturity.

The authors explore the importance of measures involving interest rates in light of recent literature on balance of payments crises. They also explain the rationale behind the empirical assessment of the interest (inflation) rate sensitivity of monetary aggregates.

Finally, they offer estimates of an aggregate money demand equation by introducing the contract-intensive money ratio as a measure of financial innovation.

This paper — a joint product of the Private and Financial Sectors Development Unit, Europe and Central Asia Region, and the University of Maryland— is part of a larger effort to study monetary and financial sector reforms in emerging markets. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Shirley Dy, room H6-372, telephone 202-473-2544, fax 202-522-0073, Internet address sdy@worldbank.org. The authors may be contacted at almashat@econ.umd.edu or dgrigorian@worldbank.org. (21 pages)

1978. Behavioral Responses to Risk in Rural China

Jyotsna Jalan and Martin Ravallion
(September 1998)

Does risk perpetuate poverty in a credit-constrained economy? Income risk appears not to discourage schooling but does inhibit the out-migration of labor. Only a small share of wealth is held in unproductive liquid forms to protect against income risk.

Does risk perpetuate poverty in a credit-constrained economy?

Jalan and Ravallion study portfolio and other behavioral responses to measured risk using household panel data for rural China.

One-quarter of wealth is held in unproductive liquid forms. But only a small share of this appears to be a precaution against income risk.

The authors estimate that eliminating income risk would reduce the share of wealth held in liquid form by less than 1 percentage point. Moreover, that effect is confined largely to middle-income groups; high-income households do not, it seems, need to hold unproductive precautionary wealth, and the poor probably cannot afford to do so.

The authors find no evidence that income risk discourages schooling, but risk does inhibit the out-migration of labor.

Generally, the results provide only limited support for the idea that uninsured risks promote unproductive portfolio behavior in this setting. There is such an effect, but it is small in magnitude and cannot be deemed an important cause of poverty.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to better understand the causes of poverty. The study was funded by the Bank's Research Support Budget under the research project "Dynamics of Poverty in Rural China" (RPO 678-69). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. The authors may be contacted at jjalan @worldbank.org or mravallion @worldbank.org. (35 pages)

1979. Banking on Crises: Expensive Lessons from Recent Financial Crises

Gerard Caprio, Jr.
(September 1998)

Information and incentive problems lie at the root of many recent financial crises in Asian and Latin American economies. Effective regulation is also important: The economies with the most conservative regulatory environments weathered the crises best.

What has caused the epidemic of financial crises in the past 20 years? And what steps can be taken — perhaps are being taken — to minimize financial vulnerability?

Caprio summarizes both basic and proximate factors behind financial crises, arguing that although a variety of factors contribute to the crises, the basic causes are information and incentive problems.

Caprio develops a scoring system for the broad regulatory environment for a dozen Asian and Latin American financial systems in 1997. The Asian economies in crisis score the lowest. Economies with high scores felt relatively little impact from the crises.

The scoring system may serve as a guide for how countries might assign priorities to improvements in their regulatory environment, although further research is needed to sort out more important factors from less important factors.

Caprio stresses one conclusion: Given the information problems inherent in finance, regulatory systems that allow "multiple eyes" to oversee the financial system should perform best. Bank owners, markets, and supervisors must all be given clear incentives and adequate information to monitor banks.

This paper — a product of Finance, Development Research Group — is part of a larger effort in the group to examine the role of incentives in the financial sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, Internet address psintimaboagye@worldbank.org. The author may be contacted at gcaprio@worldbank.org. (32 pages)

1980. The Effect of Household Wealth on Educational Attainment: Demographic and Health Survey Evidence

Deon Filmer and Lant Pritchett
(September 1998)

While household wealth is strongly related to educational attainment of children nearly everywhere, the magnitude and pattern of the effect of wealth differs widely. The gap in attainment of children of the poor and rich ranges from only one or two years in some countries to nine or ten years in others. This attainment gap is the result of different patterns of enrollment and dropout: while in South America low attainment among the poor is almost entirely due to children who enroll then drop out early, in West Africa and South Asia many poor children never enroll.

Using household survey data from 44 Demographic and Health Surveys in 35 countries, Filmer and Pritchett document different patterns in the enrollment and attainment of children from rich and poor households. They find that:

- Enrollment profiles of the poor differ across countries but fall into distinctive regional patterns. In some areas (including much of South America) the poor reach nearly universal enrollment in first grade but then drop out in droves. In others (including much of South Asia and West Africa), the poor never enroll. Both patterns lead to low attainment.
- There are enormous differences across countries in the "wealth gap" — the difference in enrollment and educational attainment between the rich and the poor. In some countries the difference between the rich and poor in the median number of years of school completed is only a year or two; in others the gap is as great as nine or ten years.
- The attainment profiles can be used as diagnostic tools to examine issues in the educational system, including the extent to which enrollment is low because of the physical unavailability of schools.

Filmer and Pritchett overcome the lack of data on income and consumption expenditures in the surveys by constructing a proxy for long-run household wealth, using survey information on assets and using the statistical technique of principal components.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to inform education policy. The study was funded by the Bank's Research Support Budget under the research project "Educational Enrollment and Dropout" (RPO 682-11). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sheila Fallon, room MC3-638, telephone 202-473-8009, fax 202-522-1153, Internet address sfallon@worldbank.org. The authors may be contacted at dfilmer@worldbank.org or lpritchett @worldbank.org. (38 pages)

1981. Evaluating Public Expenditures When Governments Must Rely on Distortionary Taxation

James E. Anderson and Will Martin
(September 1998)

This paper offers simple, robust operational rules for evaluating public spending in distorted economies — rules that are more complex than the border price rule but involve only one additional parameter: the marginal cost of funds.

Anderson and Martin provide simple, robust rules for evaluating public spending in distorted economies. Their analysis integrates within a clean, unified framework previous treatments of project evaluation as special cases.

Until recently it was widely believed that government projects could be evaluated without reference to the cost of raising tax revenues. The classic border price rule provided a simple and apparently robust procedure for project evaluation. But the border price rule developed in shadow pricing literature requires very strong assumptions to be valid when governments must rely on distortionary taxation and are unable or unwilling to cover the costs of the project through user charges.

Anderson and Martin use a rigorous formal model in which governments must rely on distortionary taxation to explore the welfare consequences of governments providing different types of goods. They show that the border price rule is accurate only in one rather special case: when project outputs are sold at their full value to consumers — something that is difficult to do with a public good such as a lighthouse or a functioning judicial system.

When a publicly provided good is sold for less than its full value to consumers, one must take into account the implications for government revenues of providing public goods. Anderson and Martin present project evaluation rules that are more complex than the border price rule but involve only one additional parameter: the compensated *marginal cost of funds* for the taxes on which the government relies.

The rules suggested involve adjusting the fiscal revenues the project generates (or destroys) by the marginal cost of funds before comparing them with the assessed benefits to project producers and consumers.

In the case of a protected but tradable good provided by the government, the result is a shadow price that is below the world market price. Where projects produce output that is sold without charge, the costs of the project inputs must also be adjusted using the marginal cost of funds. In intermediate cases where the government levies user charges that fall below the full value of the goods to the private sector, the revenue shortfall from the project must be adjusted by the marginal cost of funds.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to assess the consequences of policy interventions. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Will Martin may be contacted at wmartin1@worldbank.org. (27 pages)

1982. Analyzing Financial Sectors in Transition: With Special Reference to the Former Soviet Union

Alan Roe, Paul Siegelbaum, and Tim King (September 1998)

One result of ignoring the true messiness of the transition from a command to a market economy is that governments are sometimes offered flawed policy recommendations and conclusions that are at odds with reality. Here is a framework for reflecting on certain features of bank behavior during the transition from a command to a market economy — and on public policy interventions for the sector often advocated by the International Monetary Fund, the World Bank, and other donor agencies.

The economic transition from a command to a market economy is a complex, messy process, during which the incentives of economic agents may be significantly different from incentives familiar to Western economies. As a result, attempts to transplant Western institutional and regulatory norms of good practice into transition economies may produce disappointing, even counterproductive, results.

Roe, Siegelbaum, and King show some specific characteristics of transition economies that are likely to have an impact on bank behavior and safety. They argue that these characteristics do not inevitably fade away as the transition proceeds; indeed, they may endure for an extended period.

This being so, Roe, Siegelbaum, and King propose a simple analytical framework designed to shed light on the characteristics of the banking sector during the transition. This framework relies on familiar theories of asymmetric information and the potential advantages banks have in mitigating both the adverse risk and moral hazard associated with imperfect information.

This framework suggests that the safety of an individual bank (and by extension the system) depends on three factors that evolve significantly during the transition:

- The bank's own internal information and information processing capabilities.
- The sophistication of the banking products it tries to offer.
- The external operating environment the bank faces (an environment that is affected by almost all aspects of transition reform).

Among their many conclusions:

- Bank "safety" is an elusive concept in transition economies, one not easily managed.
- A transitional banking system may be quite "safe" even though regulatory reform may have progressed only minimally.

Their analysis helps to account for several paradoxes observed in transition banking systems, including the relatively long-term survival of banks which by any objective standard are insolvent.

This paper is a product of Ukraine/Belarus Country Unit, Europe and Central Asia Region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Diana Cortijo, room H2-023, telephone 202-458-4005, fax 202-477-3288, Internet address dcortijo@worldbank.org. The authors may be contacted at aroe@worldbank.org or psiegelbaum@worldbank.org. (55 pages)

1983. Pension Reform in Small Developing Countries

Thomas Charles Glaessner and Salvador Valdes-Prieto (September 1998)

For small countries the Chilean pension model should be modified to rely more on international trade in financial services — especially services that benefit from economies of scale and scope, such as collections, account processing, and benefit payments. The unbundling of pension services — such as the collection of contributions and the payment of benefits — is more advantageous in small than in large countries.

Glaessner and Valdes-Prieto provide a framework in which small countries can assess the proper role for the state and the private sector in pension policy. Based on industrial organization theory and pension economics, this framework draws on experience in small countries.

The authors identify how optimal pension policies can change in small countries (those with fewer than 1 million active contributors to pension funds), explore optimal pension reform design for small countries, and incorporate other stylized assumptions about small countries into the discussion: the relatively greater international mobility of labor and capital, the greater scarcity of human capital specialized in financial supervision and tax administration, fewer independent interests, and higher political volatility and risk over long time horizons.

They conclude that:

- For small countries the Chilean model should be modified to include greater reliance on international trade in financial services — especially services that benefit from economies of scale and scope, such as collections, account processing, and benefit payments. Such an approach would require a greater harmonization of accounting and regulatory standards between small developing countries and the countries from which financial services are imported.
- The unbundling of pension services is more advantageous in small than in large countries.
- The collection of contributions and the payment of benefits (which are subject to substantial economies of scale for small countries) should be mandatorily unbundled from other pension services.
- Those services should be provided separately to ensure competition in the selection of trustees and competitive investment management services. This type of pension system design may be preferable to having a foreign firm provide all pension services.
- When other assumptions (such as susceptibility to large gross migration flows) are combined with the assumption of a small-country base, mandatory pension systems or fiscal incentives are found to be less effective in small than in large countries. Large countries have broader contribution bases and much smaller gross migration flows, making them demographically more stable.
- The relatively greater international migration in small countries makes full funding of pension systems even more important in small than in large countries.

This paper is a product of the Latin America and the Caribbean Region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Miguel Navarro, room I5-076, telephone 202-458-4722, fax 202-522-2106, Internet address mnavarromartin@worldbank.org. The authors may be contacted at thomas_glaessner@sfmny.com or svaldes @volcan.facea.puc.cl. (55 pages)

1984. NAFTA, Capital Mobility, and Mexico's Financial System

Thomas Charles Glaessner and Daniel Oks
(September 1998)

Several analytical approaches are integrated to answer three questions: Are there aspects of the NAFTA accord, combined with liberalization of Mexico's financial system, that will affect the efficiency with which financial services are provided or the size and composition of capital flows to Mexico? How does NAFTA affect macroeconomic and microeconomic policies related to the financial system? And through which channels will NAFTA affect macroeconomic stability or risk in the financial system?

Typically the impact of the North American Free Trade Agreement (NAFTA) is analyzed from a macroeconomic perspective, to examine the implications for capital market flows or for the aggregate degree of financial integration. This analysis often involves examining whether certain conditions of arbitrage or efficiency tend to hold, given greater integration of financial markets.

Alternatively, other work examines only the effects of greater financial integration for the efficiency with which financial services are provided microeconomically.

The two approaches are rarely combined, nor are the effects of integration considered within such a combined framework.

Glaessner and Oks combine the two approaches to examine how NAFTA will affect capital flows and the efficiency with which financial services are provided in Mexico.

They also call attention to domestic financial system and monetary and exchange rate policy issues that Mexico must address if greater financial integration is not to result in increased risk for the domestic financial system or greater macroeconomic instability.

This paper — a product of the Latin America and the Caribbean Region — is part of a larger effort in the region to examine the impact of cross-regional policy lessons. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Miguel Navarro, room I5-076, telephone 202-458-4722, fax 202-522-2106, Internet address mnavarromartin @worldbank.org. Thomas Glaessner may be contacted at thomas_glaessner @sfmny.com. (55 pages)

1985. The Optimality of Being Efficient: Designing Auctions

Lawrence M. Ausubel and Peter Cramton
(September 1998)

This paper provides a new defense for emphasizing efficient auction design rather than optimal *auction design. Because in auction markets followed by perfect resale, it is "optimal" to be "efficient."*

In an optimal auction, a revenue-optimizing seller often awards goods inefficiently, either by placing them in the wrong hands or by withholding them from the market. This conclusion rests on two assumptions: (1) the seller can prevent resale among bidders after the auction, and (2) the seller can commit to not selling the withheld goods after the auction.

Ausubel and Cramton examine how the optimal auction problem changes when those assumptions are relaxed. In sharp contrast to the no-resale assumption, they assume perfect resale: all gains from trade are exhausted in resale. In a multiple-object model with independent signals, they characterize optimal auctions with resale. They prove generally that with perfect resale, the seller can do no better than assign goods efficiently. Moreover, any misassignment of goods strictly lowers the seller's revenue from the optimum. In auction markets followed by perfect resale, it is optimal to be efficient.

The authors' results provide a new defense for emphasizing efficient auction design rather than optimal auction design. The presence of a perfect resale market forces even the most selfish seller, whose sole objective is maximizing revenues, to focus — out of necessity — on efficiency. Given the vast and active resale market in Treasury securities, it seems safe to assert that the model with perfect resale is a better description of the U.S. Treasury market than the model without any resale — so its predictions ought to be taken more seriously.

This paper — a product of the Private Participation in Infrastructure Division, Private Sector Development Department — is part of a larger effort in the department to study issues arising from private participation in infrastructure. The study was funded by the Bank's Research Support Budget under the research project "Auctions in Infrastructure" (RPO 682-58). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Vivas, room Q7-005, telephone 202-458-2809, fax 202-522-2029, Internet address svivas@worldbank.org. The authors may be contacted at ausubel @econ.umd.edu or peter@cramton.umd.edu. (23 pages)

1986. Putting Auction Theory to Work: The Simultaneous Ascending Auction

Paul Milgrom
(September 1998)

Economic theory was used in designing the "simultaneous ascending auction," which was introduced in 1994 to sell U.S. radio spectrum licenses. But in designing real auctions there are important practical questions for which current economic theory offers no answers.

Milgrom discusses how economic theory was used in the design and improvement of the "simultaneous ascending auction," developed initially for the sale of radio spectrum licenses in the United States in 1994. Efficiency of allocation was the statutory goal.

Much attention to the auction came from its role in reducing federal regulation of the radio spectrum and allowing market values, rather than administrative fiat, to determine who would use the spectrum resource. Observers were also fascinated by the large amounts of money involved and the auction's extensive reliance on Weblike information technology.

The first use of the auction rules resulted in a $617 million sale of 10 paging licenses in July 1994. In the broadband PCS auction, which began in December 1994, 99 licenses were sold for about $7 billion. After these auctions it became difficult to ignore the tremendous value of the large amounts of spectrum allocated to uses — such as high-definition television — for which Congress had demanded no compensation. Perceived success with the new rules inspired similar spectrum auctions in countries around the world.

Milgrom analyzes some of the auction's capabilities and inherent limitations, the roles of various rules, the possibilities for introducing combinatorial bidding, and some considerations in adapting the auction for sales with a revenue goal. Drawing on both traditional and new elements of auction theory, he concludes, theorists have been able to analyze proposed designs, detect biases, predict shortcomings, identify tradeoffs, and recommend solutions.

But in designing real auctions there are important practical questions for which theory currently offers no answers. The "bounded rationality" constraints that limit the effectiveness of the generalized Vickrey auction have so far proved particularly resistant to simple analysis. Because of such limits to our knowledge, auction design is a kind of engineering activity. It entails practical judgments, guided by theory and all available evidence, but it also uses ad hoc methods to resolve issues about which theory is silent. As with other engineering activities, the practical difficulties of designing effective real auctions themselves inspire new theoretical analyses, which appear to be leading to new, more efficient, and more robust designs.

This paper — a product of the Private Participation in Infrastructure Division, Private Sector Development Department — is part of a larger effort in the department to study issues arising from private participation in infrastructure. The study was funded by the Bank's Research Support Budget under the research project "Auctions in Infrastructure" (RPO 682-58). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Vivas, room Q7-005, telephone 202-458-2809, fax 202-522-2029, Internet address svivas @worldbank.org. The author may be contacted at milgrom@stanford.edu. (25 pages)

1987. Political Economy and Political Risks of Institutional Reform in the Water Sector

Ariel Dinar, Trichur K. Balakrishnan, and Joseph Wambia
(September 1998)

An approach combining structured analysis of political economy and expert opinion is developed and used to estimate the political risk associated with implementing a series of institutional reforms in Pakistan's water sector.

It is difficult and time-consuming to get adequate information about influence groups in a society. Dinar, Balakrishnan, and Wambia develop an approach to estimating the political risk associated with implementing a set of institutional reforms in the water sector. Their approach endogenizes the actions taken by politicians, users, service providers, and other stakeholders. Their analysis provides insights into the relationships between institutional arrangements, the power structure, and policy outcomes.

The authors develop a two-tier tool to assess the risks associated with implementing reform. The first tier is a structured analysis of the distribution of power among groups interested in the outcome of reform. The second tier is a Delphi process, based on experts' opinions.

Their approach is a compromise between the two options: the first (structured analysis) is costly and time-consuming and often entails creating and using pseudo-precise indices; the second (Delphi) process is an unstructured "expert opinion" way of assessing risk.

Their compromise approach provides a manageable framework that, after some testing, could be added to the feasibility analysis of projects undertaken in politically complicated environments.

They apply the approach to the National Drainage Program Project, currently in the early stages of implementation in Pakistan. They describe risk mitigation strategies that should be followed in dealing with political risks associated with the project.

This paper — a joint product of the Rural Development Sector Management Unit, South Asia Region, and the Rural Development Department — is part of a larger effort in the Bank to appraise the National Drainage Program Project in Pakistan and apply the approach to other water-related projects with institutional reform components. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Fulvia Toppin, room S8-220, telephone 202-473-0450, fax 202-522-1142, Internet address ftoppin @worldbank.org. The authors may be contacted at adinar@worldbank.org, tbalakrishnan@worldbank.org, or jwambia@worldbank.org. (40 pages)

1988. The Informal Sector, Firm Dynamics, and Institutional Participation

Alec R. Levenson and William F. Maloney
(September 1998)

The high informality and mortality and apparent stagnation of developing country microfirms are often thought to result from government-induced distortions in labor or product markets. A new approach assumes that these informal firms have dynamics similar to firms in industrial countries, and that formality can be thought of as the decision to participate in societal institutions. This leads to a substantially different vision of the relationship between formality and the nature of the small firm that emphasizes the informal firm first as a normal enterprise and second as informal.

The informal microfirm sector is believed to be large, accounting for 20–40 percent of employment in many developing countries. The literature tends to view the sector as the disadvantaged sector of a segmented labor market, as existing to evade government regulations, or as constrained by lack of access to government services.

Levenson and Maloney offer a unique theoretical framework to analyze informality and microfirm growth behavior — one that emphasizes the entrepreneurial nature of informal firms and sees informality as a secondary characteristic.

First, they assume that informal firms in developing countries have dynamics similar to firms in industrial countries: entrepreneurs have unobserved, differing cost structures that determine their long-run size and survival — structures that they can only discover by going into business.

Second, informality can be thought of as a decision to participate in societal institutions. Access to mechanisms that ensure property rights, pool risk, or enforce contracts become more important as a firm grows, and the entrepreneur will be willing to pay for them through "taxes" in a way that was not the case as a small firm.

The combination of these assumptions generates several of the stylized facts emerging from cross-sectional data and identified in existing models — informal firms tend to remain small and have high rates of mortality, and lower productivity — without recourse to government-induced distortions in labor or product markets. Further, the framework predicts that firms whose cost structures dictate that they should expand will make the transition to formality as they grow.

Using detailed observations from Mexico, Levenson and Maloney find their view consistent with patterns of formality and growth of microfirms.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Latin America and the Caribbean Region — is part of a larger effort in the region to understand the structure of labor markets in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tania Gomez, room I8-102, telephone 202-473-2127, fax 202-522-2119, Internet address tgomez@worldbank.org. William Maloney may be contacted at wmaloney@worldbank.org. (31 pages)